

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An image sensor comprising:
 - a plurality of photoelectric converter elements each ~~operable to convert~~of which converts an optical signal into an electric signal;
 - a plurality of channel selector switches which correspond to said photoelectric converter elements and which are selectively turned on and off to selectively connect and disconnect output portions of the corresponding photoelectric converter elements to and from a common signal line, in synchronization with a clock pulse signal; ~~and~~
 - a first input terminal through which a resolution setting timing signal is received from an external device outside of the image sensor;
 - a second input terminal through which a second resolution setting signal is received from said external device; and
 - a resolution setting portion ~~operable to receive a~~that receives said resolution setting timing signal, ~~asaid~~a first resolution setting signal and ~~asaid~~a second resolution setting signal, and ~~to select~~selects one of a plurality of on-off control patterns of said plurality of channel selector switches, on the basis of on-off states of the first and second resolution setting signals upon at least one of rising and falling of said resolution setting timing signal, said plurality of channel selector switches being selectively turned on and off in the selected on-off control pattern, to set an image resolution value of the image sensor.
2. (Currently Amended) The image sensor according to claim 1, further comprising a shift register circuit ~~operable to that~~ selectively ~~turn~~turns on and off said plurality of channel selector switches in the on-off control pattern selected by said resolution setting portion, and wherein ~~said resolution setting portion receives said resolution setting~~

~~timing signal and said first and second resolution setting signals from an external device,~~ said resolution setting timing signal and said first and second resolution setting signals ~~being~~ are selected from a group consisting of a control signal for setting said image resolution value, a start signal for starting said shift register circuit, and said clock pulse signal.

3. (Original) The image sensor according to claim 2, wherein said resolution setting timing signal is one of said control signal and said clock pulse signal, and said resolution setting portion prevents said start signal from starting said shift register circuit for a predetermined length of time after a moment of said the rising or falling of said resolution setting timing signal.

4. (Currently Amended) The image sensor according to claim 2, wherein said shift register circuit ~~is operable to simultaneously~~ turns on a plurality of adjacent switches of said plurality of channel selector switches, when said image resolution value set by said resolution setting portion is other than a highest one of a plurality of image resolution values available by an operation of said resolution setting portion, the number of said adjacent switches varying depending upon the image resolution value set by said resolution setting portion.

5. (Previously Presented) The image sensor according to claim 1, wherein said resolution setting portion is operated to set said image resolution value before each line of image is read by operation of said plurality of photoelectric converter elements and said plurality of channel selector switches.

6. (Previously Presented) The image sensor according to claim 1, wherein said resolution setting portion is operated to set said image resolution value before each page of image is read by operation of said plurality of photoelectric converter elements and said plurality of channel selector switches.

7. (Original) The image sensor according to claim 1, wherein the electric signals generated as image signals by the electric signals generated by said plurality of photoelectric converter elements are accompanied by an image resolution signal indicative of the image resolution value set by said resolution setting portion.

8. (Original) The image sensor according to claim 1, wherein the number of said plurality of on-off control patterns of said plurality of channel selector switches is equal to a multiple of four, and said plurality of on-off control patterns correspond to respective different values of the image resolution of the image sensor.

9. (Currently Amended) ~~An~~The image sensor comprising according to claim 1,
~~a plurality of photoelectric converter elements each operable to convert an~~
~~optical signal into an electric signal;~~
~~a plurality of channel selector switches which correspond to said photoelectric~~
~~converter elements and which are selectively turned on and off to selectively connect and~~
~~disconnect output portions of the corresponding photoelectric converter elements to and from~~
~~a common signal line, in synchronization with a clock pulse signal; and~~
a wherein said resolution setting portion operable to receive a receives from
said external device said first resolution setting signal and said second resolution setting
signal through said second and third input terminals, respectively, before each page of image
is read with said plurality of channel selector switches are being selectively turned on to
connect said output portions of the corresponding photoelectric converter elements to said
common signal line, said resolution setting portion being operable to select one of a plurality
of on-off control patterns of said plurality of channel selector switches, on the basis of on-off
states of said first and second resolution setting signals, said plurality of channel selector
switches being selectively turned on and off in the selected on-off control pattern, to set an
image resolution value of the image sensor.

10. (Currently Amended) ~~An~~ The image sensor comprising according to claim 1,
~~a plurality of photoelectric converter elements each operable to convert an~~
~~optical signal into an electric signal;~~
~~a plurality of channel selector switches which correspond to said photoelectric~~
~~converter elements and which are selectively turned on and off to selectively connect and~~
~~disconnect output portions of the corresponding photoelectric converter elements to and from~~
~~a common signal line, in synchronization with a clock pulse signal;~~
~~a shift register circuit operable to selectively turn on and off said plurality of~~
~~channel selector switches; and~~
~~a resolution setting portion operable to receive a first resolution setting signal and a second~~
~~resolution setting signal, and to select one of a plurality of on-off control patterns of said~~
~~plurality of channel selector switches, on the basis of on-off states of said first and second~~
~~resolution setting signals, said plurality of channel selector switches being selectively turned~~
~~on and off in the selected on-off control pattern, to set an image resolution value of the image~~
~~sensor;~~
~~said resolution setting portion including at least one of (a) a first portion for~~
~~changing a moment at which the on-off states of the first and second resolution setting signals~~
~~respectively received through said second and third input terminals from said external device~~
~~are detected to select one of the plurality of on-off control patterns of the plurality of channel~~
~~selector switches, and (b) a second portion for changing the on-off states of the first and~~
~~second resolution setting signals at a predetermined moment of detection of the on-off states~~
~~of the first and second resolution setting signals,~~
~~wherein said shift register circuit is operable to simultaneously turn turns on a~~
~~plurality of adjacent switches of said plurality of channel selector switches, when said image~~
~~resolution value set by said resolution setting portion is other than a highest one of a plurality~~

of image resolution values available by an operation of said resolution setting portion, the number of said adjacent switches varying depending upon the image resolution value set by said resolution setting portion.

11. (Currently Amended) The image sensor according to claim 10, wherein said shift register circuit ~~is operable to turn~~turns on successive groups of the channel selector switches each group consisting of said plurality of adjacent switches, in synchronization with respective successive pulses of said clock pulse signal, when the image resolution value set by said resolution setting portion is other than the highest value.

12. (Currently Amended) An image reading device comprising:

an image sensor as defined in claim 1;

a resolution-setting-timing-signal generating portion ~~operable to generate that~~generates said resolution setting timing ~~signal;~~signal which is received by said resolution setting portion from said external device through said first input terminal;

a first resolution-setting-signal generating portion ~~operable to generate that~~generates said first resolution setting ~~signal;~~signal which is received by said resolution setting portion from said external device through said second input terminal;

a second resolution-setting-signal generating portion ~~operable to generate that~~generates said second resolution setting ~~signal;~~signal which is received by said resolution setting portion from said external device through said third input terminal; and

a control portion ~~operable to control that controls~~ said resolution-setting-timing-signal generating portion and said first and second resolution-setting-signal generating portions.

13. (Currently Amended) The image reading device according to claim 12, wherein said image sensor further comprises a shift register circuit ~~operable to that~~ selectively ~~turn~~turn on and off said plurality of channel selector switches in the on-off

control pattern selected by said resolution setting portion, and wherein said resolution setting timing signal and said first and second resolution setting signals which are respectively generated by said resolution-setting-timing-signal generating portion and said first and second resolution-setting-signal generating portions are selected from a group consisting of a control signal for setting said image resolution value, a start signal for starting said shift register circuit, and said clock pulse signal.

14. (Original) The image reading device according to claim 13, wherein said resolution-setting-timing-signal generating portion and said first and second resolution-setting-signal generating portions generate said control signal, said start signal and said clock pulse signal, respectively, and said control portion controls the on-off states of said start signal and said clock pulse signal upon at least one of rising and falling of said control signal.

15. (Original) The image reading device according to claim 13, wherein said resolution setting timing signal is one of said control signal and said clock pulse signal, and said shift register circuit is not started by said start signal for a predetermined length of time after a moment of said the rising or falling of said resolution setting timing signal.

16. (Original) The image reading device according to claim 13, wherein said resolution-setting-timing-signal generating portion generates one of said control signal and said clock pulse signal, as said resolution setting timing signal, and said control portion controls one of said resolution-setting-timing-signal generating portion and said first and second resolution-setting-signal generating portions to generate said start signal again, to start said shift register circuit, after said image resolution value is set by said resolution setting portion.

17. (Original) The image reading device according to claim 12, wherein said resolution setting portion is operated to set said image resolution value before each line of

image is read by operations of said plurality of photoelectric converter elements and said plurality of channel selector switches.

18. (Original) The image reading device according to claim 12, wherein said resolution setting portion is operated to set said image resolution value before each page of image is read by operation of said plurality of photoelectric converter elements and said plurality of channel selector switches.

19. (Currently Amended) The image reading device according to claim 12, wherein said shift register circuit ~~is operable to~~ simultaneously ~~turn~~ turns on a plurality of adjacent switches of said plurality of channel selector switches, when said image resolution value set by said resolution setting portion is other than a highest one of a plurality of image resolution values available by an operation of said resolution setting portion, the number of said adjacent switches varying depending upon the image resolution value set by said resolution setting portion.

20. (Currently Amended) The image reading device according to claim 19, wherein said shift register circuit ~~is operable to turn~~ turns on successive groups of the channel selector ~~switches~~ switches, each group consisting of said plurality of adjacent switches, in synchronization with respective successive pulses of said clock pulse signal, when the image resolution value set by said resolution setting portion is other than the highest value.

21. (Currently Amended) The image reading device according to claim 20, further comprising a feeding device that moves ~~is operable to move~~ a row of said photoelectric converter elements and an original carrying an image, relative to each other in a direction perpendicular to a direction of extension of said row, at a speed which increases with an increase in the number of said plurality of adjacent switches.

22. (Original) The image reading device according to claim 12, wherein image signals generated by the electric signals generated by said plurality of photoelectric converter

elements are followed by an image resolution signal indicative of the image resolution value set by said resolution setting portion.

23. (Original) The image sensor according to claim 12, wherein the number of said plurality of on-off control patterns of said plurality of channel selector switches is equal to a multiple of four, and said plurality of on-off control patterns correspond to respective different values of the image resolution of the image sensor.

24. (Currently Amended) The image reading device according to claim 12, wherein said resolution-setting-timing-signal generating portion ~~is operable to change~~changes a moment of rising or falling of said resolution setting timing signal, depending upon said image resolution value to be set by said resolution setting portion, while said first and second resolution-setting-signal generating portion ~~is operable to generate~~generates said first and second resolution setting signals such that a pulse of each of said first and second resolution setting signals rises and falls at respective predetermined fixed first and second moments relative to said moment of rising or falling of said resolution setting timing signal.

25. (Currently Amended) The image reading device according to claim 12, wherein said first and second resolution-setting-timing-signal generating portions ~~are operable to change~~ a moment of at least one of rising and falling of each of said first and second resolution setting signals, depending upon said image resolution value to be set by said resolution setting portion, while said resolution-setting-timing-signal generating portion ~~is operable to generate~~generates said resolution setting timing signal such that a pulse of said resolution setting timing signal rises and falls at respective predetermined fixed moments.

26. (Currently Amended) The image reading device according to claim 25, wherein said first and second resolution-setting-signal generating portions ~~are operable to~~ change the moment of falling of each of said first and second resolution setting signals relative to the moment of falling of said resolution setting timing signal.

27. (Currently Amended) The image reading device according to claim 25, wherein said first and second resolution-setting-signal generating portions ~~are operable to~~ change the moments of rising and falling of each of said first and second resolution setting signals relative to the moments of rising and falling of said resolution setting timing signal.

28. (Currently Amended) The image reading device according to claim 25, wherein said first and second resolution-setting-signal generating portions ~~are operable to~~ change the moments of rising and falling of each of said first and second resolution setting signals relative to moments of falling of two successive pulses of said resolution setting timing signal.

29. (Currently Amended) An image reading device comprising:

- a plurality of photoelectric converter elements each ~~operable to convert of~~ which converts an optical signal into an electric signal;
- a signal generating portion ~~operable to generate~~ that generates a start signal and a clock pulse signal;
- a plurality of channel selector switches which correspond to said photoelectric converter elements and which are selectively turned on and off to selectively connect and disconnect output portions of the corresponding photoelectric converter elements to and from a common signal line, in synchronization with said clock pulse signal;
- a shift register circuit ~~that operable to~~ selectively ~~turn~~ turn on and off said plurality of channel selector switches, said shift register circuit being started by said start signal; and
- a resolution setting portion ~~operable to receive~~ that receives said start signal and said clock pulse signal, and to select one of a plurality of on-off control patterns of said plurality of channel selector switches, on the basis of on-off states of said start signal and said

clock pulse signal, said plurality of channel selector switches being selectively turned on and off in the selected on-off control pattern, to set an image resolution value of the image sensor,

said resolution setting portion including ~~at least one of~~ (a) a first portion for changing a moment at which the on-off states of ~~the first and second resolution setting signals~~ said start signal and said clock pulse signal are detected to select one of the plurality of on-off control patterns of the plurality of channel selector switches, and (b) a second portion for changing the on-off states of ~~the first and second resolution setting signals~~ said start signal and said clock pulse signal at a predetermined moment of detection of the on-off states of the ~~first and second resolution setting signals~~ start signal and the clock pulse signal.

30. (Currently Amended) A method of setting an image resolution of an image sensor comprising a plurality of photoelectric converter elements each ~~operable to convert of~~ which converts an optical signal into an electric signal, ~~and~~ a plurality of channel selector switches which correspond to said photoelectric converter elements and which are selectively turned on and off to selectively connect and disconnect output portions of the corresponding photoelectric converter elements to and from a common signal line, in synchronization with a clock pulse signal, and a shift register circuit that selectively turns on and off said plurality of channel selector switches, said method comprising the steps of:

generating a resolution setting timing signal, a first resolution setting signal and a second resolution setting ~~signal;~~ signal, which are received by the image sensor through first, second and third input terminals, respectively, from an external device outside of the image sensor; and

selecting one of a plurality of on-off control patterns of said plurality of channel selector switches, on the basis of on-off states of the first and second resolution setting signals upon at least one of rising and falling of said resolution setting timing signal,

said plurality of channel selector switches being selectively turned on and off in the selected on-off control pattern, to set an image resolution value of the image ~~sensor~~sensor,

wherein said resolution setting timing signal and said first and second resolution setting signals are selected from a group consisting of a control signal for setting said image resolution value, a start signal for starting said shift register circuit, and said clock pulse signal.

31. (Canceled)

32. (Currently Amended) The ~~image sensor~~method according to claim 30, wherein the number of said plurality of on-off control patterns of said plurality of channel selector switches is equal to a multiple of four, and said plurality of on-off control patterns correspond to respective different values of the image resolution of the image sensor.

33. (Currently Amended) An image sensor according to claim 9, wherein said resolution setting portion includes ~~at least one~~ of (a) a first portion for changing a predetermined moment at which the on-off states of the first and second resolution setting signals are detected to select one of the plurality of on-off control patterns of the plurality of channel selector switches, and (b) a second portion for changing the on-off states of the first and second resolution setting signals at a moment of detection of the on-off states of the first and second resolution setting signals.